

CONTROLLED DOCUMENT

EG&G ROCKY FLATS PLANT

ENVIRONMENTAL MANAGEMENT

This is a RED Stamp

ROCKY FLATS PLANT
EMD OPERATING
PROCEDURES MANUAL

Manual No.: 5-21000-OPS-SW
Procedure No.: Table of Contents, Rev 5
Page: 1 of 2
Effective Date: 05/22/92
Organization: Environmental Management

THIS IS ONE VOLUME OF A SIX VOLUME SET WHICH INCLUDES:

VOLUME I: FIELD OPERATIONS (FO)
VOLUME II: GROUNDWATER (GW)
VOLUME III: GEOTECHNICAL (GT)
VOLUME IV: SURFACE WATER (SW)
VOLUME V: ECOLOGY (EE)
VOLUME VI: AIR (AP)

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ADMIN RECORD

A SW-001106

REVIEWED FOR CLASSIFICATION/UCNI

By *[Signature]*

Date: *May 18, 1992*

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EG&G - ROCKY FLATS PLANT
ENVIRONMENTAL MANAGEMENT

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SITE DESCRIPTION

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**5-21000-OPS
SW.12, Rev. 2
1 of 7
March 1, 1992
Environmental Management**

Category 2

**TITLE:
SITE DESCRIPTION**

Approved By:

(Name of Approver)

J. E. Reed

5/12/92

(Date)

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REVIEWED FOR CLASSIFICATION/UCNI

By *J. E. Reed*

Date *May 18, 1992*

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2.0 PURPOSE AND SCOPE

This standard operating procedure (SOP) describes procedures to be used in site description of surface water and sediment data collection sites at the Rocky Flats Plant (RFP). Site description is being performed to obtain uniform identification and to provide background site descriptions for all surface water and sediment stations at the RFP.

Identification of these sites will be based on visual inspection of the sites and areas in the near vicinity of the sites. In addition, certain dimensions of surface water bodies will be determined by measurement.

All sampling stations, regardless of whether they are currently being sampled, will be described. The frequency of site description will be determined by EG&G personnel.

3.0 RESPONSIBILITIES AND QUALIFICATIONS

Personnel performing site descriptions will be geologists, hydrologists, engineers, or field technicians with an appropriate amount of applicable field experience or on-the-job training under supervision of another qualified person.

4.0 REFERENCES

4.1 SOURCE REFERENCES

The following is a reference reviewed prior to the writing of this procedure:

Davis, Richard A. Depositional Systems, A Genetic Approach to Sedimentary Geology. Prentice-Hall, Inc. Englewood Cliffs, New Jersey. 07632. 1983

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4.2 INTERNAL REFERENCES

A related SOP cross-referenced by this SOP is:

- SOP FO.10, Receiving, Labeling, and Handling Environmental Materials Containers

5.0 METHODS

5.1 EQUIPMENT

Equipment used in the collection of site description information will include but is not limited to the following:

- Steel tape measure
- Rock color chart
- Particle size and roundness chart
- Communications radio
- Site description forms
- Hand lens
- Boot covers and gloves
- Trash bags
- Clipboard
- Pen
- Camera (optional-EG&G may supply photographer and camera)

Check to be sure that each of these items is loaded into the field vehicle before proceeding to the sample sites.

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5.2 PROCEDURES

Proceed to the data collection site. Carry a site description form, pen, clipboard, tape measure, and color and particle size charts.

Fill in the date, crew members, contractor, and location on the site description form. Note the program area (from following list) and the operating unit, if known.

- Background
- Perimeter Security Zone
- Walnut Creek
- Woman Creek
- Americium Zone
- Interceptor Ditch
- Landfill
- West Spray Field
- 881 Hillside
- Central Avenue
- Mound Area

Visually inspect the sample site in order to assess each condition listed on the site description form. Record the information on the form.

Using the steel tape, measure the dimensions of the water body and record the dimensions to the nearest foot. Note any sample sites which may be appropriate for spring box installation. Seeps and springs are suited for this purpose.

5.2.1 Describing Sediments

Describe sediments (bed materials) in terms of lithology, particle size, color, textural maturity (sorting, roundness), staining, and presence of organic material. The following descriptive aids should be used for this purpose:

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- Particle size and roundness chart
- Rock color chart

Textural maturity is a measure of the energy of the depositional environment which caused the deposition of sediments. It is a function of clay content, sorting, and the angularity of sediment grains.

Sorting is a measure of the spread of the distribution of particle sizes found in a sediment deposit. For example, a sample of bed material which contains various amounts of clay, silt, sand, and cobbles would be considered a poorly sorted sediment because of the wide spread of particle sizes. A homogeneous sand would be considered very well sorted.

Sediment grains display varying degrees of roundness ranging from very angular to very well rounded. This property can be assessed both visually and by touch. Use the roundness chart provided to make objective comparisons to determine this property for sediments at each site.

5.2.2 Describing Surrounding Areas

Visually inspect soils in the area, noting the areal extent and color of the soils. If the thickness of soil layers is apparent, make a note of it. Note the presence and lithology of any rock outcrops in the area. Note the predominant particle size for sediment found in the area. Use the hand lens to obtain visual lithological information. Do not, however, break up any rock material for this (or any other) purpose.

Qualitative side slope conditions for streams should be described as well as the regional slope direction.

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Visually inspect the area for vegetation and describe the relative abundance and type of plants present, if known.

5.2.3 Site Photographs

Site photographs will be taken at each site. EG&G personnel will be responsible for providing a camera and for assigning a photographer to complete this task. The photographs will accompany site description forms in the site description report.

6.0 PERSONNEL DECONTAMINATION

Personnel performing site description activities will wear disposable gloves and boot covers. These items will be discarded in trash bags upon completion of activities at each site. New gloves and boot covers will be required for each site. Trash will be handled as potentially contaminated environmental solids in accordance with SOP FO.10, Receiving, Labeling, and Handling Environmental Materials Containers.

Personnel will not wade into water bodies during the site description activities.

7.0 QUALITY ASSURANCE/QUALITY CONTROL

Quality assurance (QA) and quality control (QC) for site description at the RFP will consist of performing the descriptions twice, and verifying the correctness of entries on typewritten final versions of the site description forms.

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8.0 DOCUMENTATION

All information required by this SOP will be documented on the Site Description form found in this section. The forms will be accompanied by location maps and photographs of each site.

SURFACE WATER AND SEDIMENT SAMPLING SITES

Date _____ Field Crew _____ Contractor _____
SW Site _____ SED Site _____ Reviewed By: _____
Northing _____ Easting _____ Photograph Number(s), bearing _____
Program Area _____ Operating Unit _____ Other _____
Weather Conditions _____

SURFACE WATER

Type of Water Body (ditch, pond, seep, stream, pipe, other) _____
Physical location (relationship to nearby tributaries) _____
Width of Water Body _____ Depth _____ Length _____
Water Clarity (clear, cloudy, turbid, other) _____ Discharge (Q, in cfs) _____
Velocity (flood stage, fast, moderate, slow, stagnant, dry) _____
Are flow rate and clarity seasonal or influenced by a storm event? _____
Appropriate for spring box installation? _____ Why? _____
Additional Comments _____

SEDIMENTS

Predominant Bed Materials Particle Size (clay, silt, sand, gravel, boulders) _____
Percentages of major minerals _____
Bed Material Color _____ Sorting _____ Roundness _____
Iron, Manganese or Other Staining _____
Amount of Organic Material in Sediments _____
Additional Comments _____

VEGETATION ASSOCIATED WITH SAMPLING SITE

Vegetation in Water, Sediments (abundant, moderate, sparse, none) _____
Algae Growth (abundant, moderate, sparse, none) _____
Cattails (abundant, moderate, sparse, none) _____
Other Aquatic Plants: (type is known, or description) _____

SURROUNDING AREA/SETTING

Geologic Unit(s) _____
Soil Present (abundant, moderate, sparse) _____ Soil Color _____
Presence of Rock Outcrops, Boulders, Cobbles, Pebbles, Sand _____
Rock Type(s) _____ Rock color _____
Side Slope Conditions: (steep, moderate, low, flat ground) _____
Direction of Slope _____
Surface Vegetation (abundant, moderate, sparse, none) _____
Type if known, or description: _____
Other Comments _____